

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing: 06 March 1997 (06.03.97)	Applicant's or agent's file reference: OPP960360KR
International application No.: PCT/KR96/00145	Priority date: 24 August 1995 (24.08.95)
International filing date: 23 August 1996 (23.08.96)	
Applicant: KIM Sun Young et al	

1. The designated Office is hereby notified of its election made

☒ in the demand filed with the International preliminary Examining Authority on
20 February 1997 (20.02.97)

☐ in a notice effecting later election filed with the International Bureau on

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer:

J. Zahra

Telephone No.: (41-22) 730.91.11

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT



To:

KIM, Won Ho
YOU ME Patent & Law Firm

702, Teheran Bd., 825-33,
Yoksam-dong, Kangnam-ku
Seoul 135-080
Republic of Korea

NOTIFICATION OF RECEIPT OF DEMAND

(PCT Rule 61.1(b), first sentence
and Administrative Instructions, Section 601)

Date of mailing (day/month/year) 24 Feb. 1997 (24.02.97)

Applicant's or agent's file reference
OPP960360KR

IMPORTANT NOTIFICATION

International application No.

PCT / KR 96/00145

International filing date (day/month/year)

23 Aug. 1996 (23.08.96)

Priority date (day/month/year)

24 Aug. 1995 (24.08.95)

Applicant

Il Dong Pharmaceutical Co., Ltd. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority considers the following date as the date of receipt of the demand for international preliminary examination of the international application:

20 Feb. 1997 (20.02.97)

2. This date of receipt is:



the actual date of receipt of the demand.



the date on which the proper corrections to the demand were timely received.

3. ☐ This date is **AFTER** the expiration of 19 months from the priority date.

Attention: The election(s) made in the demand does (do) not have the effect of postponing the commencement of the national phase until 30 months from the priority date (or later in some Offices) (Article 39(1)). Therefore, the acts for entry into the national phase must be performed within 20 months from the priority date (or later in some Offices) (Article 22).

For details, see Annex B to Form PCT/IB/301 sent by the International Bureau and Volume II of the PCT Applicant's Guide.



This notification confirms the information given in person or by telephone on:

4. Only where paragraph 3 applies, a copy of this notification has been sent to the International Bureau.

Name and mailing address of the IPEA/

AT
AUSTRIAN PATENT OFFICE
Kohlmarkt 8-10
A-1014 Vienna

Facsimile No.

+43 / 1 / 534 24 - 535

Authorized officer

Tschochner

Telephone No.

+43 / 1 / 534 24 - 450

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ AT

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty.

For International Preliminary Examining Authority use only	
AUSTRIAN PATENT OFFICE Identification of IPEA	20 February 1997 (20.02.97) Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION	
Applicant's or agent's file reference OPP960360KR	
International application No. PCT/KR 96/00145	International filing date (day/month/year) 23 August 1996 (23.08.96)
(Earliest) Priority date (day/month/year) 24 August 1995 (24.08.95)	
Title of invention HETEROLOGOUS PROTEIN PRODUCTION SYSTEM USING AVIAN CELLS	
Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Il Dong Pharmaceutical Co., Ltd. 60, Yangjae-dong, Seocho-ku, Seoul 137-130 Republic of Korea	
Telephone No.: 02-745-9342	
Facsimile No.: 0334-73-4860	
Teleprinter No.:	
State (i.e. country) of nationality: KR	State (i.e. country) of residence: KR
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) KIM, Sun Young 3-306, Hanshin Seolae Apt., 70-1, Panpo-dong Seocho-ku, Seoul 137-040 Republic of Korea	
State (i.e. country) of nationality: KR	State (i.e. country) of residence: KR
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) KIM, Kee Won 77-1402, Hyundai Apt., 456, Apkujeong-dong Kangnam-ku, Seoul 135-110 Republic of Korea	
State (i.e. country) of nationality: KR	State (i.e. country) of residence: KR
<input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet.	

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet is not to be included in the demand.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

KIM, Tae Han
206-1503, LG Apt., 111, Jeongja-dong
Puntang-ku, Seongnam-shi, Kyonggi-do
463-010 Republic of Korea

State (i.e. country) of nationality:

KR

State (i.e. country) of residence:

KR

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

HWANG, Jeong Ho
203-1202, Hanshin Apt., 124, Imae-dong
Puntang-ku, Seongnam-shi, Kyonggi-do
463-060 Republic of Korea

State (i.e. country) of nationality:

KR

State (i.e. country) of residence:

KR

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

KIM, Seon Hee
23-704, Hanshin 3rd Apt., Panpo 2-dong
Seocho-ku, Seoul
137-042 Republic of Korea

State (i.e. country) of nationality:

KR

State (i.e. country) of residence:

KR

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

LEE, Sun Young
205, Samick Hights Villa, 38-3, Karak-dong
Songpa-ku, Seoul
138-160 Republic of Korea

State (i.e. country) of nationality:

KR

State (i.e. country) of residence:

KR

☐ Further applicants are indicated on another continuation sheet.

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*KIM, Won Ho
YOU ME Patent & Law Firm
702, Teheran Bd., 825-33, Yoksam-dong
Kangnam-ku, Seoul, 135-080
Republic of Korea

Telephone No.:

02-553-5990

Facsimile No.:

02-553-5254

Teleprinter No.:

☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV STATEMENT CONCERNING AMENDMENTS**

The applicant wishes the International Preliminary Examining Authority*

(i) ☐ to start the international preliminary examination on the basis of the international application as originally filed.(ii) ☐ to take into account the amendments under Article 34 of☐ the description (amendments attached).☐ the claims (amendments attached).☐ the drawings (amendments attached).(iii) ☒ to take into account any amendments of the claims under Article 19 filed with the International Bureau (a copy is attached).(iv) ☐ to disregard any amendments of the claims made under Article 19 and to consider them as reversed.(v) ☐ to postpone the start of the international preliminary examination until the expiration of 20 months from the priority date unless that Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Box No. V ELECTION OF STATES☒ The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)* except*(If the applicant does not wish to elect certain eligible States, the name(s) or country code(s) of those States must be indicated above.)*

Box No. VI CHECKLIST

The demand is accompanied by the following documents for the purposes of international preliminary examination:

- | | | |
|--|---|----------|
| 1. amendments under Article 34 | | |
| description | : | sheets |
| claims | : | sheets |
| drawings | : | sheets |
| 2. letter accompanying amendments under Article 34 | : | sheets |
| 3. copy of amendments under Article 19 | : | 2 sheets |
| 4. copy of statement under Article 19 | : | sheets |
| 5. other (specify): | : | sheets |

For International Preliminary
Examining Authority use only

received not received

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- | | |
|--|--|
| 1. <input type="checkbox"/> separate signed power of attorney | 4. <input checked="" type="checkbox"/> fee calculation sheet |
| 2. <input type="checkbox"/> copy of general power of attorney | 5. <input type="checkbox"/> other (specify): |
| 3. <input type="checkbox"/> statement explaining lack of signature | |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

KIM, Won Ho



For International Preliminary Examining Authority use only

- | | |
|--|---|
| 1. Date of actual receipt of DEMAND: 20 Feburary 1997 (20.02.97) | |
| 2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b): | |
| 3. <input type="checkbox"/> The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply. | <input type="checkbox"/> The applicant has been informed accordingly. |
| 4. <input type="checkbox"/> The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5. | |
| 5. <input type="checkbox"/> Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82. | |

For International Bureau use only

Demand received from IPEA on:

PCT

FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination

International application No. PCT/KR 96/00145 <hr/> Applicant's or agent's file reference OPP960360KR	For International Preliminary Examining Authority use only <hr/> Date stamp of the IPEA
Applicant Il Dong Pharmaceutical Co., Ltd. et al.	
Calculation of prescribed fees 1. Preliminary examination fee ATS 2,200 P 2. Handling fee (<i>Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.</i>) ATS 2,060 H 3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box ATS 4,260 <div style="border: 1px solid black; width: 100px; margin: 0 auto; text-align: center; padding: 2px;">TOTAL</div>	
Mode of Payment <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> authorization to charge deposit account with the IPEA (see below) </div> <div style="width: 45%;"> <input checked="" type="checkbox"/> cash </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> cheque </div> <div style="width: 45%;"> <input type="checkbox"/> revenue stamps </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> postal money order </div> <div style="width: 45%;"> <input type="checkbox"/> coupons </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> bank draft </div> <div style="width: 45%;"> <input type="checkbox"/> other (specify): </div> </div>	
Deposit Account Authorization (<i>this mode of payment may not be available at all IPEAs</i>) The IPEA/ _____ <input type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account. <input type="checkbox"/> (<i>this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit</i>) is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.	
Deposit Account Number _____	Date (day/month/year) _____
Signature _____	

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference OPP960360KR	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">FOR FURTHER ACTION</div> <div style="font-size: small;">see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</div> </div>
International application No. PCT/KR 96/00145	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">International filing date (day/month/year) 23 August 1996 (23.08.96)</div> <div style="width: 40%;">(Earliest) Priority Date (day/month/year) 24 August 1995 (24.08.95)</div> </div>
Applicant Il Dong Pharmaceutical Co., Ltd. et al.	

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (See Box I).

2. ☐ Unity of invention is lacking (See Box II).

3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing

☐

filed with the international application.

☐

furnished by the applicant separately from the international application,

☐

but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐

transcribed by this Authority.

4. With regard to the title, ☒ the text is approved as submitted by the applicant.

☐

the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒

the text is approved as submitted by the applicant.

☐

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is:

Figure No. 8

☒

as suggested by the applicant.

☐

because the applicant failed to suggest a figure.

☐

because this figure better characterizes the invention.

☐

None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 96/00145

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁶: C 12 N 15/11, 15/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁶: C 12 N 15/11, 15/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPIL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 89/ 03 877 A1 (INSTITUT INTERNATIONAL DE LA RECHERCHE AGRONOMIQUE (INRA)) 05 May 1989 (05.05.89), claims 1,18,21,23. -----	1,8

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

08 November 1996 (08.11.96)

Date of mailing of the international search report

05 December 1996 (05.12.96)

Name and mailing address of the ISA/ AT

AUSTRIAN PATENT OFFICE

Kohlmarkt 8-10

A-1014 Vienna

Facsimile No. 1/53424/535

Authorized officer

Wolf

Telephone No. 1/53424/133

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 96/00145

Im Recherchenbericht angeführtes Patentdokument Patent document cited in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
WD A1 8903877	05-05-89	EP A1 395658 FR A1 2622207 FR B1 2622207 JP T2 3503839 US A 5252465	07-11-90 28-04-89 09-03-90 29-08-91 12-10-93

1e

PATENT COOPERATION TREATY

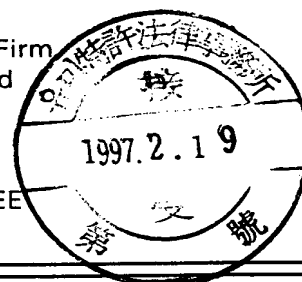
PCT

**NOTIFICATION CONCERNING
THE FILING OF AMENDMENTS OF THE CLAIMS**
(PCT Administrative Instructions, Section 417)

From the INTERNATIONAL BUREAU

To:

KIM, Won, Ho
You Me Patent & Law Firm
702, Teheran Boulevard
825-33, Yoksam-dong
Kangnam-ku
Seoul 135-080
REPUBLIQUE DE COREE



Date of mailing (day/month/year) 07 February 1997 (07.02.97)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference OPP960360KR	
International application No. PCT/KR96/00145	International filing date (day/month/year) 23 August 1996 (23.08.96)
Applicant IL DONG PHARMACEUTICAL CO., LTD. et al	

1. The applicant is hereby notified that amendments to the claims under Article 19 were received by the International Bureau on:

30 January 1997 (30.01.97)

2. This date is within the time limit under Rule 46.1.

Consequently, the international publication of the international application will contain the amended claims according to Rule 48.2(f), (h) and (i).

3. The applicant is reminded that the international application (description, claims and drawings) may be amended during the international preliminary examination under Chapter II, according to Article 34, and in any case, before each of the designated Offices, according to Article 28 and Rule 52, or before each of the elected Offices, according to Article 41 and Rule 78.

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorised officer</p> <p>Ingrid Hours</p> <p>Telephone No.: (41-22) 730.91.11</p>
---	--

K I M, WON-HO
SONG, MAN-HO
J I N, HYU-KEUN
CHOI, HYUN-SEOK
K I M, JAE-MAN
K I M, WON-GUN
C H O, HYE-G-GEUN
L E E, SANG-HUN
K I M, EUN-JIN

**YOU ME
PATENT & LAW FIRM**

TEHERAN BLDG.
825-33, YOKSAM-DONG
KANGNAM-KU, SEOUL, 135-080, KOREA

CENTRAL P. O. BOX 8633
SEOUL 100-686, KOREA

TELEPHONE: (82-2) 553-5990
FACSIMILE: (82-2) 553-5254

January 30, 1997

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20
SWITZERLAND

Via Facsimile (4 pages) &
Confirmation by courier

Re: PCT/KR 96/00145

Title: HETEROLOGOUS PROTEIN PRODUCTION SYSTEM
USING AVIAN CELLS

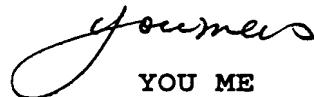
Applicant: Il Dong Pharmaceutical Co., Ltd. et al.
Our Ref: OPP 960360 KR/c

Dear Sirs:

We enclose an amendment and Letter (Section 205(b)) for
the above-identified international application under PCT
Article 19.

If you have any questions or comments, please do not
hesitate to contact us.

Very truly yours,



YOU ME
Patent & Law Firm

KWH/LSH/lyn
Enclosure

A LETTER (Section 205(b))

"Claims 1 to 27 replaced by amended claims 1 to 21."

What is claimed is:

1. An EPO production system comprising:
a DNA encoding EPO;
a vector for receiving the DNA; and
an avian cell for harboring the vector.
2. The EPO production system of claim 1, wherein the avian cell is DE or CEF or QT.
3. The EPO production system of claim 2, wherein the QT is QT-VC.
4. The EPO production system of claim 1, wherein the DNA is a genomic DNA encoding EPO.
5. The EPO production system of claim 1, wherein the DNA encoding EPO is selected from the group consisting of SY, JM, SH and HE described in Fig. 5.
6. The production system of claim 1, wherein the vector contains a promoter selected from the group consisting of SV40 early promoter, HCMV MIEP and RSV LTR.
7. A method of producing EPO comprising the steps of:
inserting a DNA encoding an EPO into a vector;
transfecting the vector into an avian cell; and
culturing the transfected avian cell in media.
8. The method of claim 7, wherein the avian cell is DE or CEF or QT.
9. The method of claim 8, wherein the QT is QT-VC.
10. The method of claim 7, wherein the DNA encoding EPO is a genomic DNA.
11. The method of claim 7, wherein the DNA encoding the EPO is

selected from the group consisting of SY, JM, SH and HE described in Fig. 5.

12. The method of claim 7, wherein the vector contains a promoter selected from the group consisting of SV40 early promoter, RSV LTR and HCMV MIEP.

13. An EPO genomic sequence selected from the group consisting of SY, JM, SH and HE described in Fig. 5.

14. An EPO amino acid sequence selected from the group consisting of JM, SH and HE described in Fig. 6.

15. An avian cell as a host for expressing a gene encoding an EPO.

16. The avian cell of claim 15, wherein the avian cell is DE or CEF or QT.

17. The avian cell of claim 16, wherein the QT is QT-VC.

18. A human heterologous protein production system comprising:

a DNA encoding a human heterologous protein;

a vector for receiving the DNA; and

an avian cell for harboring the vector.

19. The human heterologous protein production system of claim 18, wherein the human heterologous protein is selected from the group consisting of TPA, Factor VIII and EPO.

20. A method of producing a human heterologous protein comprising the steps of:

inserting a DNA encoding a human heterologous protein into a vector;

transfecting the vector into an avian cell; and

culturing the transfected avian cell in media.

21. The method of claim 20, wherein the human heterologous protein is selected from the group consisting of TPA, Factor VIII and EPO.

PATENT COOPERATION TREATY

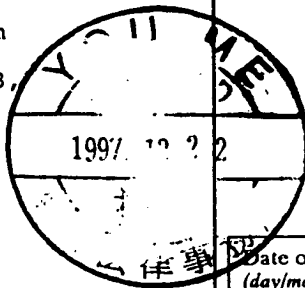
From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

KIM, Won Ho
YOU ME Patent & Law Firm

702, Teheran Bd., 825-33,
Yoksam-dong, Kangnam-ku
Seoul 135-080
Republic of Korea



NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year)

16 Dez. 1997 (16.12.97)

Applicant's or agent's file reference
OPP960360KR

IMPORTANT NOTIFICATION

International application No.

PCT / KR 96/00145

International filing date (day/month/year)

23 Aug. 1996 (23.08.96)

Priority date (day/month/year)

24 Aug. 1995 (24.08.95)

Applicant

Il Dong Pharmaceutical Co., Ltd. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA /AT

AUSTRIAN PATENT OFFICE
Kohlmarkt 8-10
A-1014 Vienna

Facsimile No. +43 / 1 / 534 24 - 535

Authorized officer

Tschochner

Telephone No.

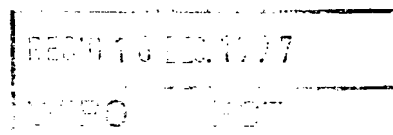
+43 / 1 / 534 24 - 450

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference OPP960360KR	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/KR 96/00145	International filing date (<i>day/month/year</i>) 23 August 1996 (23.08.96)	Priority date (<i>day/month/year</i>) 24 August 1995 (24.08.95)
International Patent Classification (IPC) or national classification and IPC IPC ⁶ : C 12 N 15/11, 15/12		
Applicant Il Dong Pharmaceutical Co., Ltd. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ ~~Lack of~~ unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 20 February 1997 (20.02.97)	Date of completion of this report 01 December 1997 (01.12.97)
Name and mailing address of the IPEA/ AT AUSTRIAN PATENT OFFICE Kohlmarkt 8-10 A-1014 VIENNA Facsimile No. 1-53424/535	Authorized officer Wolf Telephone No. 1-53424/436

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR 96/00145

I. Basis of the report

1. This report has been drawn on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

☐ the international application as originally filed.

☒ the description, pages 1-24, as originally filed,
pages _____, filed with the demand,
pages _____, filed with the letter of _____,
pages _____, filed with the letter of _____.

☒ the claims, Nos. _____, as originally filed,
Nos. 1-21, as amended under Article 19,
Nos. _____, filed with the demand,
Nos. _____, filed with the letter of _____,
Nos. _____, filed with the letter of _____.

☒ the drawings, ~~sheets~~/fig 1-17, as originally filed,
sheets/fig _____, filed with the demand,
sheets/fig _____, filed with the letter of _____,
sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR 96/00145

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☒ complied with.
- ☐ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR 96/00145

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-21	YES
	Claims		NO
Inventive step (IS)	Claims	1-21	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO

2. Citations and explanations

The document WO 89/03 877 A1 is cited in the search report. This publication relates to a heterologous gene expression system comprising a vector for receiving a DNA and an avian cell for harboring the vector and a method for producing a heterologous protein by using such a system. Thus, claims 1 and 18 as originally filed have been anticipated by this state of the art.

However, with the letter of January 30, 1997 new claims have been filed and the subject matter of the new claims is directed to a special expression system, namely to an *erythropoietin (EPO) production system*. Such a system is neither disclosed in the state of the art document cited in the search report nor obvious for a person skilled in the art. Therefore, the subject matters of claims 1-21 filed with the letter of January 30, 1997 in accordance with Article 19 PCT comply with the requirements of novelty, inventive step and industrial applicability.

What is claimed is:

1. A heterologous gene expression system comprising:
a DNA encoding a heterologous protein;
a vector for receiving the DNA; and
5 an avian cell for harboring the vector.
2. The expression system of claim 1, wherein the heterologous protein is selected from the group consisting of TPA, Factor VIII and EPO.
3. The expression system of claim 1, wherein the vector
10 contains a promoter selected from the group consisting of SV early promoter, HCMV MIEP and RSV LTR.
4. The expression system of claim 1, wherein the avian cell is selected from the group consisting of DE, CEF and QT.
5. The expression system of claim 4, wherein the QT is QT-VC.
- 15 6. The expression system of claim 1, wherein the DNA encoding the heterologous protein is DNA or cDNA.
- ⑦ An avian cell as a host for expressing a gene encoding a mammalian heterologous protein.
8. A method of producing a heterologous protein comprising
20 the steps of
culturing the avian cell containing the expression system of claim 1 to express the gene of the heterologous protein in media; and
purifying the heterologous protein from the cell and the media.
9. The method of claim 8, wherein the heterologous protein is
25 selected from the group consisting of TPA, Factor VIII and EPO.

Replaced by Article 34

10. The method of claim 8, wherein the vector contains a promoter selected from the group consisting of SV early promoter, HCMV MIEP and RSV LTR.

5 11. The method of claim 8, wherein the avian cell is selected from the group consisting of DE, CEF and QT.

12. The method of claim 11, wherein the QT is QT-VC.

13. The method of claim 8, wherein the DNA encoding the heterologous protein is DNA or cDNA.

10 14. An EPO production system comprising:
a DNA encoding EPO;
a vector for receiving the DNA; and
an avian cell for harboring the vector.

15 15. The EPO production system of claim 14, wherein the avian cell is DE or QT.

16. The EPO production system of claim 15, wherein the QT is QT-VC.

17. The EPO production system of claim 14, wherein the DNA is a genomic DNA encoding EPO.

20 18. The EPO production system of claim 14, wherein the DNA encoding EPO is selected from the group consisting of SY, JM, SH and HE described in Fig. 5.

19. The production system of claim 14, wherein the vector contains a promoter selected from the group consisting of SV early promoter, HCMV MIEP and RSV LTR.

25 20. A method of producing EPO comprising the steps of:

inserting a DNA encoding an EPO into a vector;
transfecting the vector into an avian cell; and
culturing the transfected avian cell in media.

21. The method of claim 20, wherein the avian cell is DE or QT.

5 22. The method of claim 21, wherein the QT is QT-VC.

23. The method of claim 20, wherein the DNA encoding EPO is
a genomic DNA.

24. The method of claim 20, wherein the DNA encoding the
EPO is selected from the group consisting of SY, JM, SH and HE
10 described in Fig. 5.

25. The method of claim 20, wherein the vector contains a
promoter selected from the group consisting of SV40 early promoter,
RSV LTR and HCMV MIEP.

26. An EPO genomic sequence selected from the group
15 consisting of SY, JM, SH and HE described in Fig. 5.

27. An EPO amino acid sequence selected from the group
consisting of JM, SH and HE described in Fig. 6.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) OPP960360KR

Box No. I TITLE OF INVENTION

HETEROLOGOUS PROTEIN PRODUCTION SYSTEM USING AVIAN CELLS

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

Il Dong Pharmaceutical Co., Ltd.
60, Yangjae-dong, Seocho-ku, Seoul
137-130 Republic of Korea

☐ This person is also inventor.

Telephone No.

02-745-9342

Facsimile No.

0334-73-4860

Teleprinter No.

State (i.e. country) of nationality:

KR

State (i.e. country) of residence:

KR

This person is applicant
for the purposes of:

☐ all designated
States

☒ all designated States except
the United States of America

☐ the United States
of America only

☐ the States indicated in
the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

KIM, Sun Young
3-306, Hanshin Seolae Apt., 70-1, Panpo-dong
Seocho-ku, Seoul
137-040 Republic of Korea

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box
is marked, do not fill in below.)

State (i.e. country) of nationality:

KR

State (i.e. country) of residence:

KR

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf
of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

KIM, Won Ho
YOU ME Patent & Law Firm
702, Teheran Bd., 825-33, Yoksam-dong
Kangnam-ku, Seoul, 135-080
Republic of Korea

Telephone No.

02-553-5990

Facsimile No.

02-553-5254

Teleprinter No.

☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS	
<i>If none of the following sub-boxes is used, this sheet is not to be included in the request.</i>	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)</i> KIM, Kee Won 77-1402, Hyundai Apt., 456, Apkujjeong-dong Kangnam-ku, Seoul 135-110 Republic of Korea	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State (i.e. country) of nationality: KR	State (i.e. country) of residence: KR
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)</i> KIM, Tae Han 206-1503, LG Apt., 111, Jeongja-dong Puntang-ku, Seongnam-shi, Kyonggi-do 463-010 Republic of Korea	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State (i.e. country) of nationality: KR	State (i.e. country) of residence: KR
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)</i> HWANG, Jeong Ho 203-1202, Hanshin Apt., 124, Imae-dong Puntang-ku, Seongnam-shi, Kyonggi-do 463-060 Republic of Korea	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State (i.e. country) of nationality: KR	State (i.e. country) of residence: KR
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)</i> KIM, Seon Hee 23-704, Hanshin 3rd Apt., Panpo 2-dong Seocho-ku, Seoul 137-042 Republic of Korea	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State (i.e. country) of nationality: KR	State (i.e. country) of residence: KR
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on another continuation sheet.	

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

If none of the following sub-boxes is used, this sheet is not to be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

LEE, Sun Young
 205, Samick Hights Villa, 38-3, Karak-dong
 Songpa-ku, Seoul
 138-160 Republic of Korea

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

KR

State (i.e. country) of residence:

KR

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☐ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☐ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☐ the United States of America only☐ the States indicated in the Supplemental Box☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

Regional Patent

- ☐ **AP ARIPO Patent:** KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☐ **EA Eurasian Patent:** AZ Azerbaijan, BY Belarus, KZ Kazakhstan, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, DE Germany, DK Denmark, ES Spain, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|---|---|
| <input type="checkbox"/> AL Albania | <input type="checkbox"/> MD Republic of Moldova |
| <input type="checkbox"/> AM Armenia | <input type="checkbox"/> MG Madagascar |
| <input type="checkbox"/> AT Austria | <input type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> AU Australia | |
| <input type="checkbox"/> AZ Azerbaijan | <input type="checkbox"/> MN Mongolia |
| <input type="checkbox"/> BB Barbados | <input type="checkbox"/> MW Malawi |
| <input type="checkbox"/> BG Bulgaria | <input checked="" type="checkbox"/> MX Mexico |
| <input type="checkbox"/> BR Brazil | <input type="checkbox"/> NO Norway |
| <input type="checkbox"/> BY Belarus | <input type="checkbox"/> NZ New Zealand |
| <input checked="" type="checkbox"/> CA Canada | <input type="checkbox"/> PL Poland |
| <input type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input type="checkbox"/> PT Portugal |
| <input checked="" type="checkbox"/> CN China | <input type="checkbox"/> RO Romania |
| <input type="checkbox"/> CZ Czech Republic | <input checked="" type="checkbox"/> RU Russian Federation |
| <input type="checkbox"/> DE Germany | <input type="checkbox"/> SD Sudan |
| <input type="checkbox"/> DK Denmark | <input type="checkbox"/> SE Sweden |
| <input type="checkbox"/> EE Estonia | <input type="checkbox"/> SG Singapore |
| <input type="checkbox"/> ES Spain | <input type="checkbox"/> SI Slovenia |
| <input type="checkbox"/> FI Finland | <input type="checkbox"/> SK Slovakia |
| <input type="checkbox"/> GB United Kingdom | <input type="checkbox"/> TJ Tajikistan |
| <input type="checkbox"/> GE Georgia | <input type="checkbox"/> TM Turkmenistan |
| <input type="checkbox"/> HU Hungary | <input type="checkbox"/> TR Turkey |
| <input type="checkbox"/> IS Iceland | <input type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> JP Japan | <input type="checkbox"/> UA Ukraine |
| <input type="checkbox"/> KE Kenya | <input type="checkbox"/> UG Uganda |
| <input type="checkbox"/> KG Kyrgyzstan | <input checked="" type="checkbox"/> US United States of America |
| <input type="checkbox"/> KP Democratic People's Republic of Korea | <input type="checkbox"/> UZ Uzbekistan |
| <input checked="" type="checkbox"/> KR Republic of Korea | <input type="checkbox"/> VN Viet Nam |
| <input type="checkbox"/> KZ Kazakhstan | |
| <input type="checkbox"/> LK Sri Lanka | |
| <input type="checkbox"/> LR Liberia | |
| <input type="checkbox"/> LS Lesotho | |
| <input type="checkbox"/> LT Lithuania | |
| <input type="checkbox"/> LU Luxembourg | |
| <input type="checkbox"/> LV Latvia | |

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☐
- ☐
- ☐
- ☐

In addition to the designations made above, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except the designation(s) of

The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIMFurther priority claims are indicated in the Supplemental Box ☐

The priority of the following earlier application(s) is hereby claimed:

Country (in which, or for which, the application was filed)	Filing Date (day/month/year)	Application No.	Office of filing (only for regional or international application)
item (1) KR	24 August 1995 (24. 08. 95.)	1995-26391	
item (2)			
item (3)			

Mark the following check-box if the certified copy of the earlier application is to be issued by the Office which for the purposes of the present international application is the receiving Office (a fee may be required):

☐ The receiving Office is hereby requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s): _____
Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (If two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used): ISA / AT

Earlier search Fill in where a search (international, international-type or other) by the International Searching Authority has already been carried out or requested and the Authority is now requested to base the international search, to the extent possible, on the results of that earlier search. Identify such search or request either by reference to the relevant application (or the translation thereof) or by reference to the search request.

Country (or regional Office):

Date (day/month/year):

Number:

Box No. VIII CHECK LIST

This international application contains the following number of sheets:

1. request : 5 sheets
 2. description : 24 sheets
 3. claims : 3 sheets
 4. abstract : 1 sheets
 5. drawings : 17 sheets

Total : 50 sheets

This international application is accompanied by the item(s) marked below:

1. ☒ separate signed power of attorney
 2. ☐ copy of general power of attorney
 3. ☐ statement explaining lack of signature
 4. ☐ priority document(s) identified in Box No. VI as item(s):
 5. ☒ fee calculation sheet
 6. ☒ separate indications concerning deposited microorganisms
 7. ☐ nucleotide and/or amino acid sequence listing (diskette)
 8. ☐ other (specify):

Figure No. 8 of the drawings (if any) should accompany the abstract when it is published.

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

KIM, Won Ho



For receiving Office use only

1. Date of actual receipt of the purported international application:	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority specified by the applicant: ISA /	
6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid	

For International Bureau use only

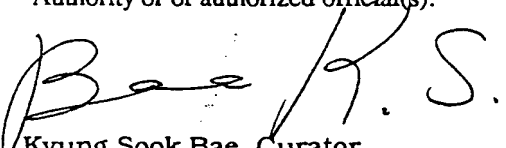
Date of receipt of the record copy by the International Bureau:

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT

issued pursuant to Rule 7.1

TO: Lee, Myung Hwan
President of Ildong Pharmaceutical Co., Ltd.
#60 Yangjae-Dong, Seocho-ku, Seoul 137-130,
Republic of Korea

I. IDENTIFICATION OF THE MICROORGANISM	
Identification reference given by the DEPOSITOR: GT35-N4D4	Accession number given by the INTERNATIONAL DEPOSITARY AUTHORITY: KCTC 0277BP
II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION	
The microorganism identified under I above was accompanied by: [x] a scientific description [] a proposed taxonomic designation (Mark with a cross where applicable)	
III. RECEIPT AND ACCEPTANCE	
This International Depositary Authority accepts the microorganism identified under I above, which was received by it on August 20 1996 .	
IV. RECEIPT OF REQUEST FOR CONVERSION	
The microorganism identified under I above was received by this International Depositary Authority on _____ and a request to convert the original deposit to a deposit under the Budapest Treaty was received by it on _____	
V. INTERNATIONAL DEPOSITARY AUTHORITY	
Name: Korea Research Institute of Bioscience and Biotechnology Korean Collection for Type Cultures Address: KCTC, KRIBB #52, Oun-dong, Yusong-ku, Taejon 305-333, Republic of Korea	Signature(s) of person(s) having the power to represent the International Depositary Authority or of authorized official(s):  Kyung Sook Bae, Curator Date: August 22 1996

PCT

FEE CALCULATION SHEET

Annex to the Request

For receiving Office use only

International application No.

Date stamp of the receiving Office

Applicant's or agent's
file reference

OPP960360KR

Applicant

Il Dong Pharmaceutical Co., Ltd. et al.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE W 40,000 T

2. SEARCH FEE W 177,000 S

International search to be carried out by AT

(If two or more International Searching Authorities are competent in relation to the international application, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FEE

Basic Fee

The international application contains 50 sheets.

first 30 sheets W 544,000 b₁

20 x W 10,700 = W 214,000 b₂
remaining sheets additional amount

Add amounts entered at b₁ and b₂ and enter total at B W 758,000 B

Designation Fees

The international application contains 9 designations.

9 x W 132,000 = W 1,188,000 D

number of designation fees amount of designation fee
payable (maximum 11)

Add amounts entered at B and D and enter total at I W 1,946,000 I

(Applicants from certain States are entitled to a reduction of 75% of the international fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the sum of the amounts entered at B and D.)

4. FEE FOR PRIORITY DOCUMENT P

5. TOTAL FEES PAYABLE

Add amounts entered at T, S, I and P, and enter total in the TOTAL box . . . W 2,163,000

TOTAL

☐ The designation fees are not paid at this time.

MODE OF PAYMENT

☐ authorization to charge
deposit account (see below)

☐ bank draft

☐ coupons

☐ cheque

☒ cash

☐ other (specify):

☐ postal money order

☐ revenue stamps

DEPOSIT ACCOUNT AUTHORIZATION (this mode of payment may not be available at all receiving Offices)

The RO/ ☐ is hereby authorized to charge the total fees indicated above to my deposit account.

☐ is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.

☐ is hereby authorized to charge the fee for preparation and transmittal of the priority document to the International Bureau of WIPO to my deposit account.

Deposit Account Number

Date (day/month/year)

Signature

PAYMENT OF FEES FOR INTERNATIONAL APPLICATION

To : Commissioner of

The Korean Industrial Property Office

Applicant	(1) Name	Il Dong Pharmaceutical Co., Ltd.		(3) Country of Nationality	Republic of Korea	
	(4) Address	60, Yangjae-dong, Seocho-ku, Seoul 137-130 Republic of Korea				
Agent	(5) Name	KIM, Won Ho	(6) Agent code	389-A 137	(7) Tel. No.	02- 553-5990
	(8) Address	702, Teheran Bd., 825-33, Yoksam-dong, Kangnam-ku Seoul, 135-080 Republic of Korea				
(9) International Application No.				(10) International Filing Date		
(11) Fees to be Paid		<input checked="" type="checkbox"/> Transmittal Fee <input checked="" type="checkbox"/> Designation Fee		<input checked="" type="checkbox"/> Basic Fee <input checked="" type="checkbox"/> Search Fee	<input type="checkbox"/> Late Payment Fee <input type="checkbox"/> Confirmation Fee	
(12) Amount of Fee		W 2,163,000		(13) Amount of Late Payment (confirmation) Fee		

Submitted herewith is payment pursuant to Article 103 of the Working
Rules of the Patent Law.

This 23 day of August, 1996

Applicant (Agent) KIM, Won Ho



※ Document Attached

1. A copy of the receipt of payment of the fees
2. A copy of the document substantiating the power of attorney, if any.